


 Industry
Canada
 Industrie
Canada

Canada

 Français
Home

 Contact Us
Site Map

 Help
What's New

 Search
About Us

 Canada Site
Registration

Strategis Index:

 A B C D E F G H I J K L M N O P Q R S T
 U V W X Y Z

strategis.gc.ca

CIPU  OPIC**Canadian Patents Database**

12/04/2001 - 10:58:18

(12) Patent Application:

(11) CA 2230443

(54) PROCESS FOR THE PRODUCTION OF ULTRAFINE PARTICLES

(54) PROCEDE DE PRODUCTION DE PARTICULES ULTRAFINES

View or Download Images

- (72) Inventors (Country): STREET, Robert (Australia)
 DING, Jun (Australia)
 MCCORMICK, Paul
 Gerard (Australia)
 MIAO, Wie-Fang (Australia)
- (73) Owners (Country): ADVANCED NANO
 TECHNOLOGIES PTY
 LTD. (Australia)
- (71) Applicants (Country): THE UNIVERSITY OF WESTERN
 AUSTRALIA (Australia)
- (74) Agent: KIRBY EADES GALE BAKER
- (45) Issued on:
- (22) Filed on: Aug. 28, 1996
- (43) Laid open on: Mar. 6, 1997
- (51) International Class (IPC): C22C 1/00 C22B 5/02 B22F 9/16
 C04B 35/622

Patent Cooperation Treaty (PCT): Yes

(85) <u>National entry on</u> :	Feb. 25, 1998
(86) <u>PCT Filing number</u> :	PCT/AU96/00539
(87) <u>International publication number</u> :	WO97/07917

(30) Application priority data:

Application No.	Country	Date
PN 5047	Australia	Aug. 28, 1995
PN 7725	Australia	Jan. 22, 1996

Availability of licence: N/A
Language of filing: English

ABSTRACT:

A new, cost effective process for the production of ultrafine particles which is based on mechanically activated chemical reaction of a metal compound with a suitable reagent. The process involves subjecting a mixture of a metal compound and a suitable reagent to mechanical activation to increase the chemical reactivity of the reactants and/or reaction kinetics such that a chemical reaction can occur which produces a solid nano-phase substance. Concomitantly, a by-product phase is also formed. This by-product phase is removed so that the solid nano-phase substance is left behind in the form of ultrafine particles. During mechanical activation a composite structure is formed which consists of an intimate mixture of nano-sized grains of the nanophase substance and the reaction by-product phase. The step of removing the byproduct phase, following mechanical activation, may involve subjecting the composite structure to a suitable solvent which dissolves the by-product phase, while not reacting with the solid nano-phase substance. The process according to the invention may be used to form ultrafine metal powders as well as ultrafine ceramic powders. Advantages of the process include a significant degree of control over the size and size distribution of the ultrafine particles, and over the nature of interfaces created between the solid nanophase substance and the reaction by-product phase.

CLAIMS: [Show all claims](#)

*** Note: Data on abstracts and claims is shown in the official language in which it was submitted.

View or Download Images :

- ☐ Cover Page Image
- ☐ Abstract Image
- ☐ Claims Image
- ☐ Disclosures Image
- ☐ Drawings Image



[Top of Page](#)

Last Modified:
2001/06/13

[Important notices and disclaimers](#)
[Privacy Statement](#)